

# METHOD FOR MANUFACTURING A SEMICONDUCTOR DEVICE HAVING A METAL-INSULATOR-METAL CAPACITOR

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## Abstract of the Disclosure

A fabrication method for forming a semiconductor device having a MIM (Metal-Insulator-Metal) capacitor is provided. A lower electrode is formed on a substrate. The lower electrode is subjected to a pre-annealing. The pre-annealing includes a thermal annealing in a hydrogen atmosphere, a nitrogen atmosphere or a mixed atmosphere of hydrogen and nitrogen. A capacitor dielectric layer is formed on the lower electrode. An upper electrode is formed on the capacitor dielectric layer. According to the present invention, the characteristic of a MIM capacitor can be enhanced by the pre-annealing without any substantial change in the materiality of the lower electrode.

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